CLAIMS

1) A method for the design and/or the selection of chemokines variants having agonist or antagonist property towards a ligand of GPCR of animal cells comprising the following steps:

A) obtaining a phage displayed library expressing on their surface said chemokine variants mutated within the domain responsible for their effector function,

B) having a culture of animal cells expressing on their membranes the GPCR,

C) Incubating the cell culture with the phage library obtained In A),

D) harvesting the cells after removal of non specifically bond and surface receptor bound phages,

E) Releasing the phages internalized in step C) by lysis of cells obtained in D)

F) Infecting an *E. coli* culture with the released phages obtained in E) and amplifying the clones previously internalized ,

G) Obtaining a phage library enriched in internalizing chemokines ligands,

H) Assaying the agonist or antagonist property of the chemokine variants versus the native one.

2) The method according to claim 1 wherein the chemokine is RANTES.

3) The method according to claim 1 wherein the GPCR expressed within the membrane of animal cells is CCR5.

4) The method according to claim 1 wherein the animal cells are human cells.

5) The method according to claim 2 wherein the phage library of RANTES variants is obtained using a method comprising the following steps:

- Obtaining a DNA sequence coding for human RANTES resulting from the amplification of cDNA prepared from activated PBMCs,
- Performing a PCR mutagenesis of the 5'portion of the DNA sequence of RANTES using a specific downstream primer and a degenerate upstream primer containing recognition sites for restriction enzymes in order to insert the PCR amplification products into the phage display vector,
- Inserting the purified PCR products into a phage display vector,
- Production of the phage library by introducing the vector containing the purified PCR products into an *E. coli* culture.

6) The method according to claim 2 wherein anti-HIV activity is assayed.

7) A method for the design and/or the selection of chemokines having agonist or antagonist property towards a GPCR of animal cells comprising the following steps:

A) obtaining a phage displayed library expressing on their surface said chemokine mutated within the domain responsible for their effector function,

B) having a culture of animal cells expressing on their membranes the GPCR,

C) Incubating the cell culture with the phage library obtained in A),

D) Eliminating the non specifically bond phages from the cells, by a process keeping the specifically bound phages on the said receptor

E) Incubating the cells obtained in D) with an *E. coli* culture and amplifying the clones being infected by the phages bound to the said receptor on animal cells,

F) Obtaining a phage library enriched in externally bound phages,

G) Assaying the agonist or antagonist property of the chemokine variants versus the native chemokine.

8) The method according to claim 7 wherein the chemokine is RANTES.

9) The method according to claim 7 wherein the GPCR expressed within the membrane of animal cells is CCR5.

10) The method according to claim 7 wherein the animal cells are human cells.

11) The method according to claim 8 wherein the phage library of RANTES variants is obtained using a method comprising the following steps:

- Obtaining a DNA sequence coding for human RANTES resulting from the amplification of cDNA prepared from activated PBMCs,
- Performing a PCR mutagenesis of the 5'portion of the DNA sequence of RANTES using a specific downstream primer and a degenerate upstream primer containing recognition sites for

restriction enzymes in order to insert the PCR amplification products into the phage display vector,

- Inserting the purified PCR products into a phage display vector,
- Production of the phage library by introducing the vector containing the purified PCR products into an E; coli culture.

12) The method according to claim 8 wherein anti-HIV activity is assayed.

13) A compound obtainable by a method according to anyone of claims 1 to 12 of the following formula: *SP#SSQ&&&-RANTES(10-68), in which

- * is L or an aromatic residue,
- # is L, M ouV
- & is S, P, T or A.

14) The compound according to claim 13) having one of the following formulae :

LSPVSSQSSA (P_1)
FSPLSSQSSA (P_2)
LSPMSSQSPA
WSPLSSQSPA
WSPLSSQSSP
LSPQSSLSSS
ASSGSSQSTS
ISAGSSQSTS
RSPMSSQSSP
YSPSSSLAPA
MSPLSSQASA

ASPMSSQSSS
QSPLSSQAST
QSPLSSTASS
LSPLSSQSAA
GSSSSSQTPA
YSPLSSQSSP
FSSVSSQSSS,
VSTLSSPAST,
ASSFSSRAPP,
QSSASSSSSA,
QSPGSSWSAA,
QSPPSSWSSS,
QSPLSSFTSS,
LSPQSSLSSS,
ASPQSSLPAA,
LSPVSSQSSA

15) The compound according to claim 13) having the formula: FSPLSSQSSA-RANTES(10-68).

16) The compound according to claim 13) having the formula: LSPVSSQSSA-RANTES (10-68).

17) A pharmaceutical composition which comprises of a compound having the formula *SP#SSQ&&&-RANTES(10-68), in which

- * is L or an aromatic residue,
- # is L, M ouV
- & is S, P, T or A,

or a pharmaceutical salt thereof, in a mixture with one or more pharmaceutically acceptable excipient.

18) The composition of claim 17) in which the compound have the formula: LSPVSSQSSA-RANTES(10-68).

19) The composition of claim 17) in which the compound have the formula: FSPLSSQSSA-RANTES(10-68).

20) A method for preventing and/or inhibiting HIV infection in humans comprising a step of treatment with a composition of claim 18).

21) A method for preventing and/or inhibiting HIV infection in humans comprising a step of treatment with a composition of claim 19).

22) A method for preventing and/or curing inflammatory or malignant diseases in humans comprising a step of treatment with a composition of claim 13 or 14.